

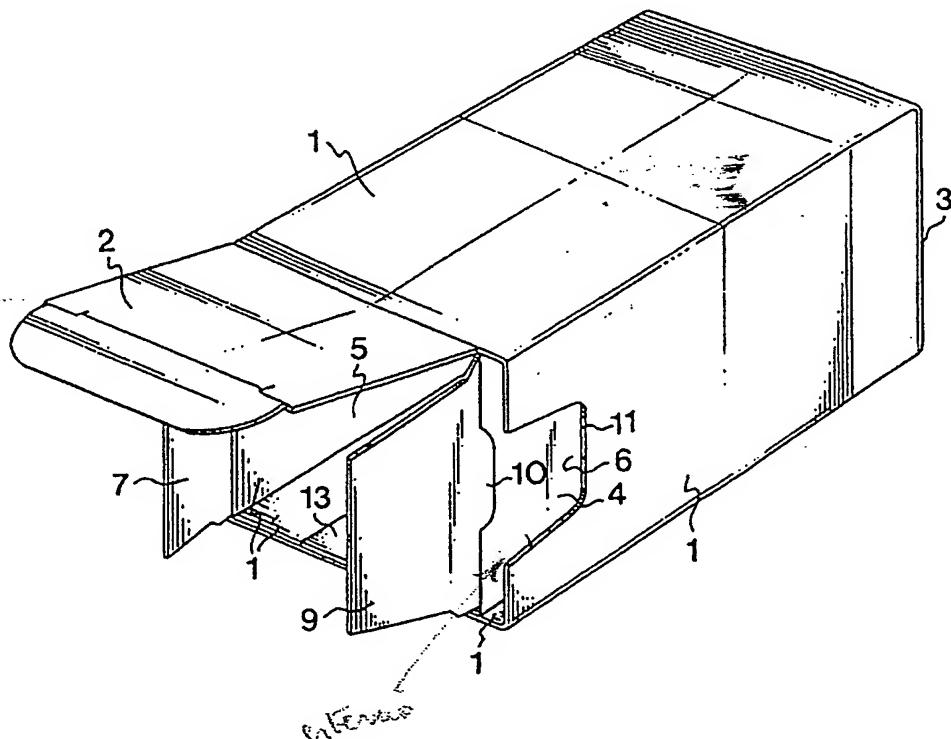


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(57) Abstract

Carton especially for pharmaceuticals, having at least three side walls (1), a top tab (2) and a bottom tab (3). It also has a partition wall (4) extending in parallel with one of the side walls (1). The partition wall (4) separates a main compartment (5) from an additional compartment (6). The additional compartment is open towards the exterior of the carton and is suitable for a package insert. The invention

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Technical Field of the Invention

5 The present invention relates to a carton especially for pharmaceuticals, having at least three side walls, a top tab, a bottom tab and a partition wall extending in parallel with one of the side walls separating a main compartment from an additional compartment. The invention also relates to a carton blank for forming the carton.

The invention further relates to a packing machine and a method of packing.

10 Background Art

Most pharmaceuticals are sold in a large number of different countries. The regulations concerning where, how, by whom and under what conditions the pharmaceuticals may or should be sold vary from one country to another. The pharmaceutical is normally packed in a primary package, such as a blister pack, a bottle or an administrating device, e.g. an inhaler or similar. The primary package is then normally put in a secondary package, a carton or similar.

20 In most countries a package insert has to be included in the carton together with the primary package. In some countries the package insert has to be in the form of one patient package insert intended for the patient and one pharmacy package insert intended for the pharmacy. The package insert or inserts contain information for the patient and for the pharmacy. The pharmacy package insert has to be removed by the pharmacist before the patient receives his medicine.

25 Often, it could be difficult for the pharmacist to determine which of the package inserts should be retained without first removing everything from the carton and then putting the primary package and the patient package insert back before the patient receives his medicine.

30 In some cases the package insert is made in one piece. In such a case, the pharmacist has to remove the package insert from the carton, divide it into two parts, i.e. one patient package insert and one pharmacy package insert, and then put the patient package insert back in the carton. During this, the primary package may fall out or it has to be taken out deliberately to get the package insert out of the carton.

35 In some countries, such as in the Nordic countries, the requirements state that the pharmacist has to stick a pharmacy label on the primary package, for instance, if a bottle or an administration device, e.g. an inhaler is involved. When doing this, the primary package has to be removed from the carton and the package insert might be removed as well. This involves a risk; namely that the pharmacist forgets to put the package insert back into the

carton, or even worse mixes it up with another package insert, which also has been taken out but from another carton.

5 This procedure of handling the package insert or inserts is unsatisfactory in many ways and it is a complicated procedure for the pharmacist. It is also associated with risks for the patient if the patient package insert is not reinserted into the carton or if the patient obtains an erroneous patient package insert.

Summary of the Invention

10 The object of the present invention is to provide a carton and a carton blank which are designed to overcome the drawbacks described above. The carton is especially for pharmaceuticals and has at least three side walls, a top tab and a bottom tab, a partition wall extending in parallel with one of the side walls and thereby separating a main compartment from an additional compartment. The invention provides a smooth mode of 15 working for the patient and for the pharmacy, without requiring complicated packing of the package insert in production. A further object of the invention is thus to provide a packing machine and a method of packing.

20 The carton according to the invention has the distinctive features defined in the characterising part of claim 1. The carton has a gable tab connected to the upper end of the partition wall, the gable tab is intended for co-operation with the top tab, the top tab covers the main compartment only and the additional compartment is open towards the exterior of 25 the carton and suitable for a package insert.

25 The carton blank according to the invention has the distinctive features defined in the characterising part of claim 6. On the carton blank, the upper end of the partition wall panel is connected to a gable tab for co-operation with the top tab and the width of the top tab corresponds to the width of the inner wall panel.

30 The packing machine and the method of packing according to the invention have the distinctive features of the characterising parts defined in claims 10 and 13, respectively. The packing machine is provided with a first and a second piston, said first piston arranged for moving the primary package together with the patient package insert into a main compartment of the carton and said second piston arranged for moving the pharmacy package insert into an additional compartment of the carton. When packing the carton a first piston moves the primary package together with the patient package insert into a main compartment of said carton and a second piston moves the pharmacy package insert into an additional compartment of the carton.

Brief Description of the Drawings

The invention is described more in detail below with reference to the drawings, in which

5 Fig. 1 is a perspective view from above of a carton according to the invention in its open position,

Fig. 2 is a perspective view from above of a carton according to the invention in its closed position,

Fig. 3 is a top plan view of a carton blank according to the invention,

10 Fig. 4 is a view showing the positioning of a primary package and a pharmacy package insert on a conveyor,

Figs 5a-5d are views showing the insertion of a primary package and a package insert into a carton according to the invention when the positioning on the conveyor is carried out as shown in Fig. 4, and

15 Fig. 6 is a view showing the positioning of a primary package and a pharmacy package insert on a conveyor according to another embodiment.

Detailed Description of Preferred Embodiments of the Invention

With reference to Figs 1 and 2, a carton according to the invention is shown in its open and closed position respectively. The carton has four side walls 1, a top tab 2 and a bottom tab 3. It also has a partition wall 4 extending in parallel with one of the side walls and separating a main compartment 5 from an additional compartment 6. The additional compartment is suitable for a package insert and is, in a preferred embodiment, open towards the exterior of the carton.

25 This carton overcomes the drawbacks of the prior art described above. The primary package can be packed in the main compartment 5 together with the patient package insert, while the pharmacy package insert can be packed in the additional compartment 6. Alternatively, the primary package can be packed in the main compartment and the 30 pharmacy package insert and the patient package insert can both be packed in the additional compartment.

The carton is provided with upper gable tabs 7, 9 for co-operation with the top tab 2 and bottom gable tabs 8 for co-operation with the bottom tab 3, as is usually the case for known cartons. In the present invention an upper gable tab 9 is connected to the upper end of the partition wall 4. The fact that the upper gable tab is connected to the partition wall and not to the side wall provides access to the additional compartment 6 without opening 35 the main compartment 5.

In a preferred embodiment, the top tab 2 covers the main compartment only, not the additional compartment. However, it is possible to let the top tab cover both the main compartment and the additional compartment when the upper gable tab 9 is connected to the partition wall 4.

To prevent the package insert from falling out of the additional compartment 6, a locking tab 10 extends from the gable tab 9 outwards over the additional compartment. The locking tab is punched in the partition wall 4 to form an integral part of the upper gable tab.

In a preferred embodiment, the side wall 1 which is parallel with the partition wall 4 and which defines the additional compartment 6 has a recess 11 which facilitates access to the additional compartment.

In an alternative embodiment, the partition wall is loosely arranged.

Fig. 3 shows a carton blank according to the invention. The carton blank comprises four substantially rectangular side wall panels 1 arranged one after the other and connected to each other along adjacent sides. A top tab 2 is connected to an upper end of one of the side wall panels, and a bottom tab 3 is connected to a bottom end of one of the side wall panels.

A substantially rectangular inner wall panel 12 has one of its side edges connected to the side edge of one of the outermost side wall panels. The opposite side edge of the inner wall panel 12 is connected to one side edge of a substantially rectangular partition wall panel 4. The opposite side edge of the partition wall panel 4 is connected to a glue tab 13. The glue tab is in this embodiment also substantially rectangular.

The carton blank is provided with upper gable tabs 7, 9 for co-operation with the top tab 2 and bottom gable tabs 8 for co-operation with the bottom tab 3. An upper gable tab 9 is connected to the upper end of the partition wall 4. The fact that the upper gable tab is connected to the partition wall and not to the side wall provides access to the additional compartment 6 without opening the main compartment 5 when the carton is erected.

The other upper gable tab 7 is connected to the upper end of the side wall panel 1 closest to the inner wall panel 12. One of the bottom gable panels 8 is connected to the bottom end of this same side wall panel.

For the convenience of this explanation, this side wall panel is called the first side wall panel 1a. The other side wall panels are called the second 1b, third 1c and fourth 1d in consecutive order, counting from the inner wall panel 12.

The bottom tab 3 is connected to the bottom end of the second side wall panel. The other bottom gable panel 8 is connected to the bottom end of the third side wall panel. The top tab 2 is connected to the upper end of the fourth side wall panel.

For instance, it is possible to arrange the top tab on the second side wall panel instead. The top tab can also be arranged on the partition wall panel 4. If direct access to the additional compartment is desired without opening of any tab when the carton is erected, no tab can be connected to the upper end of the third side wall panel 1c.

5 The tabs at the bottom end can also be arranged on other side wall panels as is apparent to the man skilled in the art.

The width of the top tab 2 corresponds to the width of the inner wall panel 12.

10 The carton blank is provided with folding lines between all panels and tabs as is conventional in the art. A folding line 14 between the first side wall panel 1a and the partition wall panel 4 is a slot-perforated folding line. A folding line between the partition wall panel 4 and the glue tab 13 is also a slot-perforated folding line. The top tab and the bottom tab are provided with cutting lines 23 as is conventional in the art.

15 A locking tab 10 forming a part of the gable tab 9 is punched in the partition wall panel 4. There is a folding line 24 between the partition wall panel 4 and the upper gable tab 9. However, the folding line 24 does not extend along the entire width of the partition wall panel 4. The folding line 24 is interrupted by a punched line 25 arranged between the partition wall panel 4 and the locking tab 10, such that the locking tab 10 is integral with the upper gable tab 9.

20 The third side wall panel 1c has a recess 11 in its upper end.

25 In the embodiment shown in Fig. 3, the height of the inner wall panel 12 is the same as the height of the side wall panels 1. The partition wall panel 4 is shorter and has the same height as the glue tab 13. This is an advantageous design when the additional compartment is desired to be shorter than the main compartment and provides sufficient strength to the partition wall.

30 To erect the carton, the carton blank is folded along the folding line such that the inside of the fourth side wall panel abuts against the outside of the inner wall panel 12. The free side edge of the fourth side wall panel is positioned at the folding line 14 between the first side wall panel and the inner wall panel. The fourth side wall panel is attached to the inner wall panel in a way known in the art. Further, the outside of the glue tab 13 abuts against the inside of the second side wall panel. The glue tab is attached to the second side wall panel in a way known in the art. These attachments may be effected by gluing.

35 The carton has been described to have an upper end and a bottom end. The carton can, however, also be turned upside down during use. If the additional compartment is open downwards, the locking tab 10 is even more important for preventing the package insert from falling out.

The most conventional shape of the carton involves four side walls. However, it is possible to use the invention in cartons having three side walls or more than four side walls.

The primary package and the package insert are packed into the carton in a packing machine. With reference to Figs 4-6, the principle of packing is as follows. The primary package 15 is disposed in a pocket 16 on a conveyor 17. While the primary package is fed forwardly in the machine, a patient package insert 18 is folded to the desired shape in an erecting machine. A carton blank is taken from a storage compartment 21, erected and then disposed in a pocket on a conveyor, which runs parallel with and is synchronised with the first conveyor 17. The folded patient package insert 18 is arranged perpendicular to the primary package 15. The primary package is moved by means of a cam-actuated first piston 22 into the carton while at the same time the patient package insert 18 is folded round the primary package and accompanies this into the carton. This takes place while the carton is advanced.

When using the above principle of packing in the carton, there are two ways of packing the pharmacy package insert in the additional compartment 6. According to a first mode of packing, the pocket 16 on the conveyor 17 is separated into a first and a second part (16b, 16a), as is shown in Fig. 4. The primary package 15 is disposed into the second part 16b of pocket (16). The pharmacy package insert is thus arranged parallel with the primary package. The pharmacy package insert 20 is fed from a storage compartment 21 above the packing machine to the second part 16a of pocket (16).

With reference to Figs 5a-5d, a first piston 22 moves the primary package 15 into the main compartment 5. A second piston 19 moves the pharmacy package insert 20 into the additional compartment 6. The patient package insert 18 is moved into the main compartment together with the primary package as described above. Subsequently, the bottom tab is closed in a normal manner.

According to a second mode of packing, the pocket 16 on the conveyor 17 is a single pocket, as is shown in Fig. 6. The pharmacy package insert 20 is first fed from a storage compartment 21 containing pharmacy package inserts 20 above the conveyor 17 into the pocket 16. Next, the primary package 15 is disposed on top of the pharmacy package insert. As in the embodiment in Figs 4 and 5, a second piston 19 moves the pharmacy package insert 20 into the additional compartment 6. Then a first piston 22 moves the primary package 15 into the main compartment 5 together with the patient package insert 18. Subsequently, the bottom tab is closed in a normal manner.

This second mode of packing is not shown in the drawings, but it is analogous to the one shown in Fig. 5, except that the first piston is arranged above the second piston

instead of beside the same. When this second mode of packing is used, the carton is, of course, turned so that the additional compartment is arranged at the very bottom.

Claims

1. A carton especially for pharmaceuticals, having at least three side walls (1), a top tab (2) and a bottom tab (3), a partition wall (4) extending in parallel with one of the side walls (1) separating a main compartment (5) from an additional compartment (6),
5 characterised in that a gable tab (9) is connected to the upper end of the partition wall (4), said gable tab (9) is intended for co-operation with the top tab (2), said top tab (2) covers the main compartment only and said additional compartment (6) is open towards the exterior of the carton and suitable for a package insert.
- 10 2. A carton according to claim 1, characterised by a locking tab (10) extending from the gable tab (9) outwards over the additional compartment (6).
- 15 3. A carton according to claim 1 or 2, characterised in that the side wall (1c) which is parallel with the partition wall (4) and which defines the additional compartment (6) has a recess (11) for facilitating access to the additional compartment (6).
- 20 4. A carton according to claims 1-3, characterised in that the partition wall (4) forms an integral part of a carton blank forming the carton.
5. A carton according to claims 1-3, characterised in that the partition wall (4) forms a separate part of the carton blank forming the carton.
- 25 6. A carton blank comprising at least three substantially rectangular side wall panels (1) arranged one after the other and connected to each other along adjacent sides, a top tab (2) connected to an upper end of one of the side wall panels (1d), and a bottom tab (3) connected to a bottom end of one of the side wall panels (1b), a substantially rectangular inner wall panel (12) and a substantially rectangular partition wall panel (4) arranged adjacent one another and connected to each other and arranged between a glue tab (13) and its closest side wall panel (1a), such that the inner wall panel (12) is connected to the side wall panel (1a) and the partition wall panel (4) is connected to the glue tab (13),
30 characterised in that the upper end of the partition wall panel (4) is connected to a gable tab (9) for co-operation with the top tab (2) and in that the width of said top tab (2) corresponds to the width of the inner wall panel (12).

7. A carton blank according to claim 6, characterised in that a locking tab (10) forming a part of the gable tab (9) is punched in the partition wall panel (4).

8. A carton blank according to claim 6 or 7, characterised in that the number of side wall panels (1) is four.

9. A carton blank according to claim 8, characterised in that the third side wall panel (1c) has a recess (11) in its upper end.

10. 10. A packing machine having a number of pockets (16) on a conveyor (17) and intended for packing a primary package (15), a patient package insert (18) and a pharmacy package insert (20) from a pocket (16) into a carton according to any one of claims 1-5, characterised in that the machine is provided with a first and a second piston (22, 19), said first piston (22) arranged for moving the primary package (15) together with the patient package insert (18) into a main compartment (5) of said carton and said second piston (19) arranged for moving the pharmacy package insert (20) into an additional compartment (6) of the carton.

11. A packing machine according to claim 10, characterised by a storage compartment (21) arranged above the conveyor (17) and containing pharmacy package inserts (20), and means for feeding one pharmacy package insert (20) at a time into each of the pockets (16).

12. A packing machine according to claim 10 or 11, characterised in that each of the pockets (16) is divided into a first and a second part (16b, 16a), whereby the first part (16b) being intended for the primary package (15) and the second part (16a) being intended for the pharmacy package insert (20).

13. A method of packing a primary package (15), a patient package insert (18) and a pharmacy package insert (20) by moving them from a pocket (16) on a conveyor (17) into a carton according to any one of claims 1-5, characterised in that a first piston (22) moves the primary package (15) together with the patient package insert (18) into a main compartment (5) of said carton and a second piston (19) moves the pharmacy package insert (20) into an additional compartment (6) of the carton.

14. A method according to claim 13, *characterised* in that a pharmacy package insert (20) is fed from a storage compartment (21) arranged above the conveyor (17) one at a time into each of the pockets (16).

5 15. A method according to claim 14, *characterised* in that the pocket (16) is divided into a first and a second part (16b, 16a), whereby the primary package (15) is fed into said first part (16b) and that the pharmacy package insert (20) is fed into said second part (16a).

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FIG.1

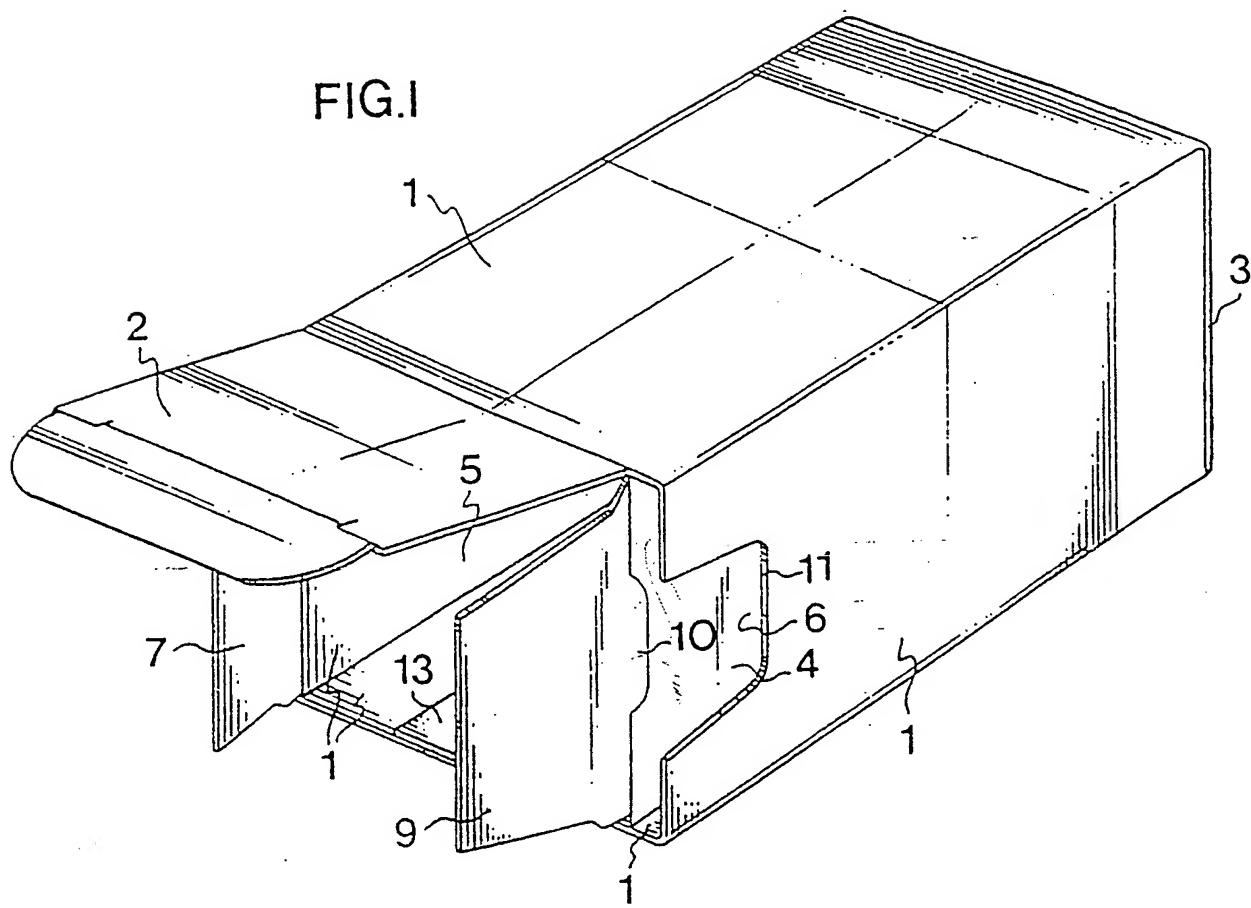
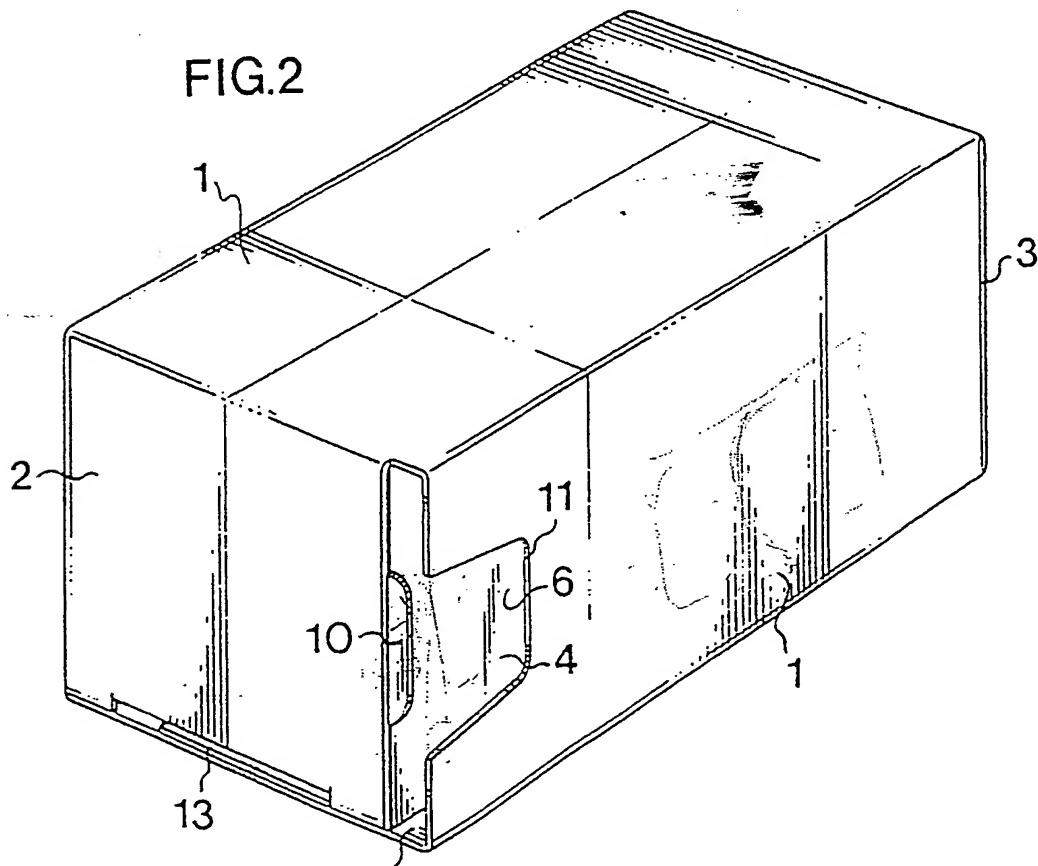


FIG.2



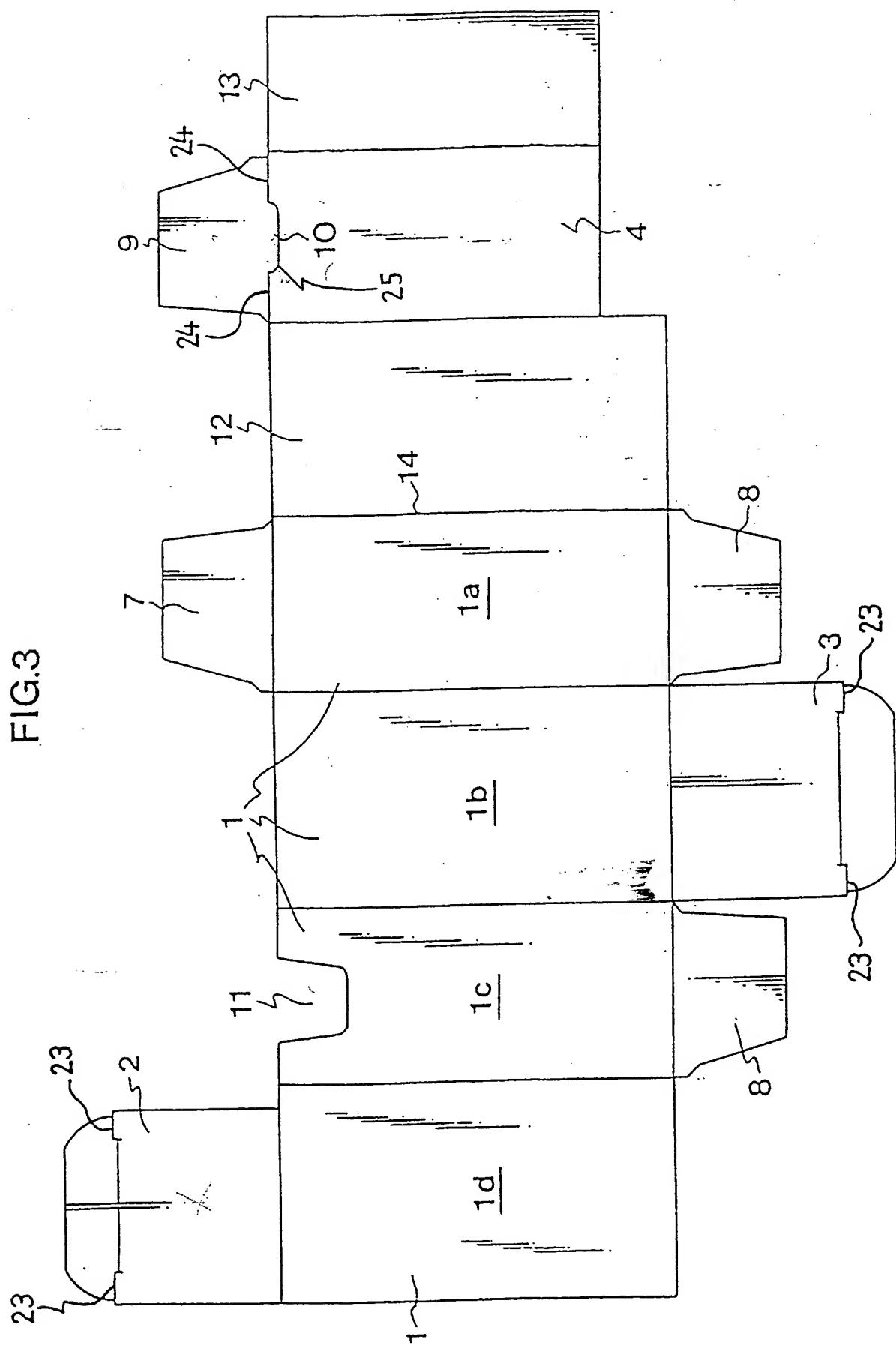


FIG.4

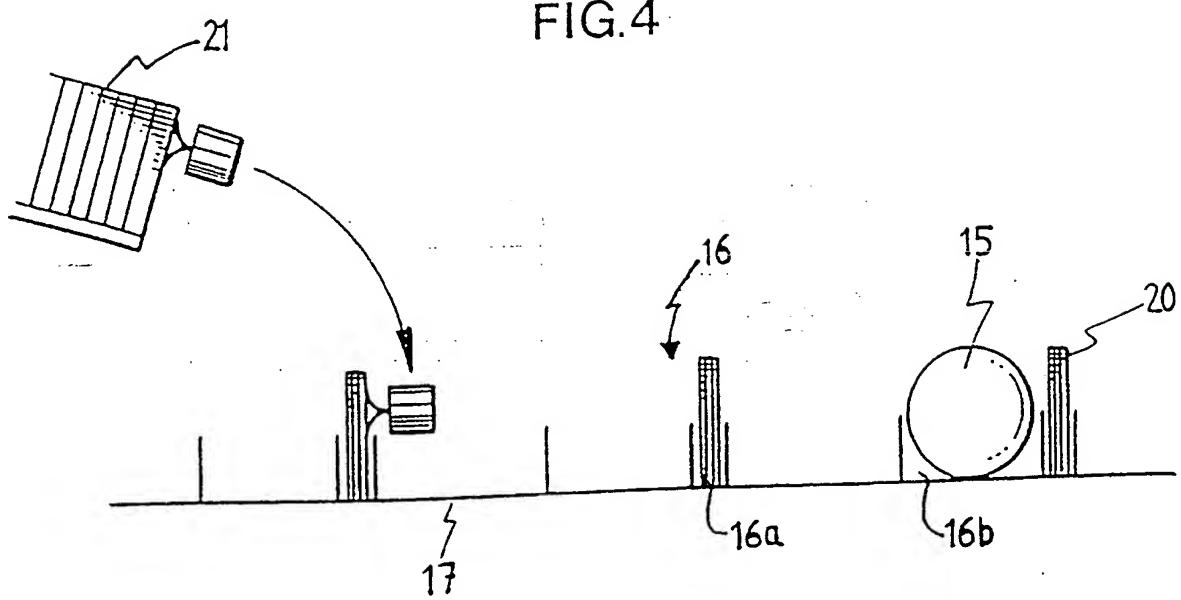


FIG.6

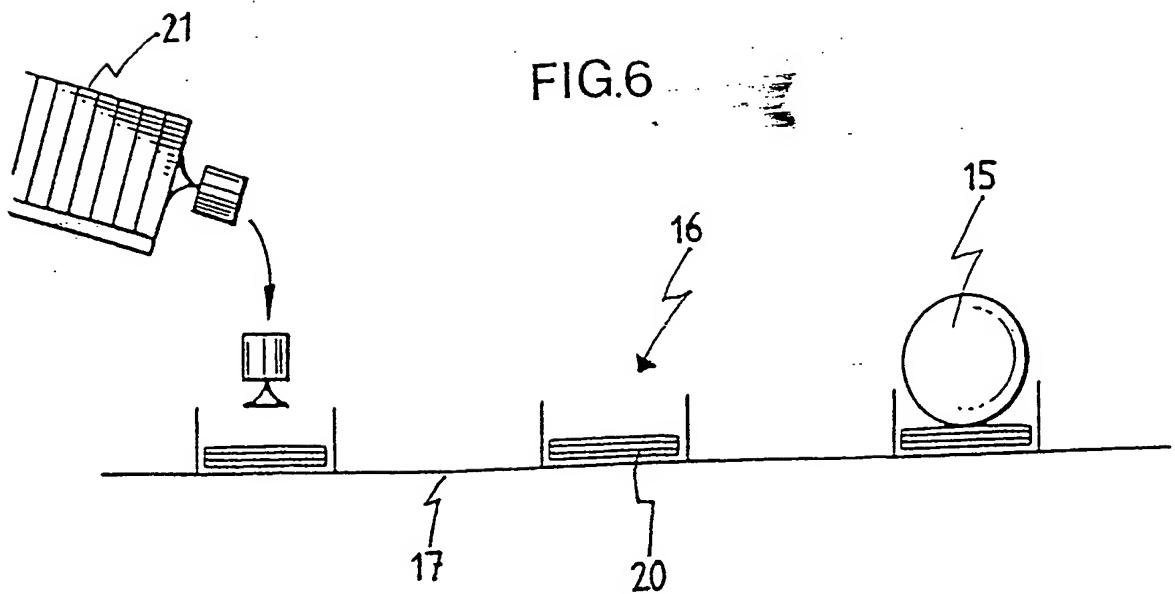


FIG. 5d

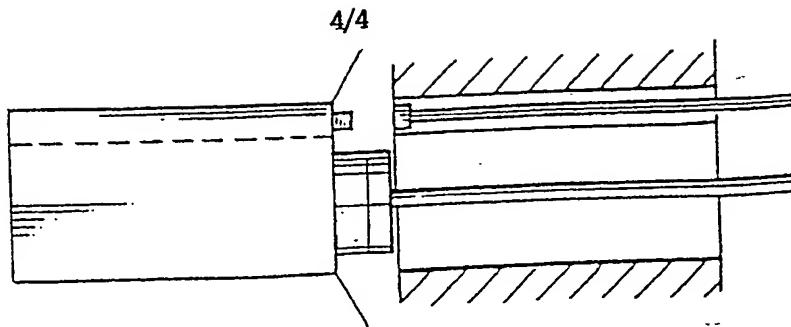


FIG. 5c

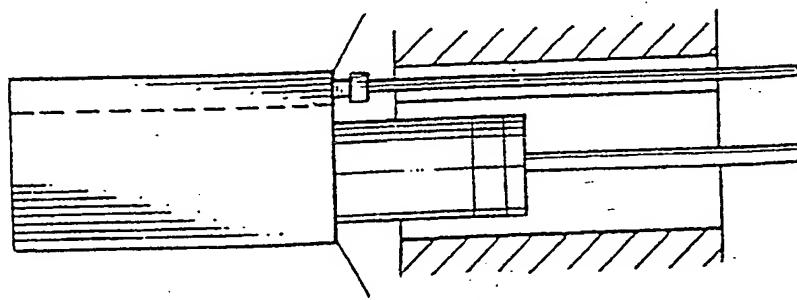


FIG. 5b

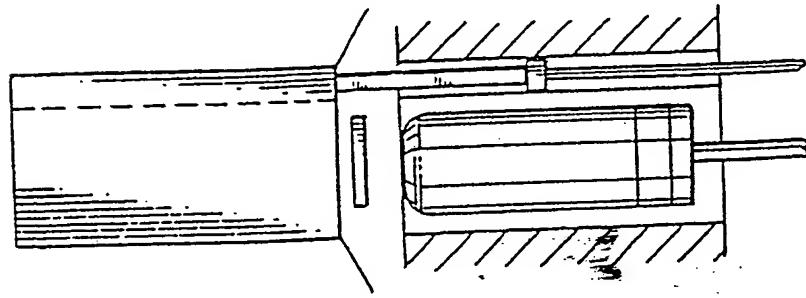
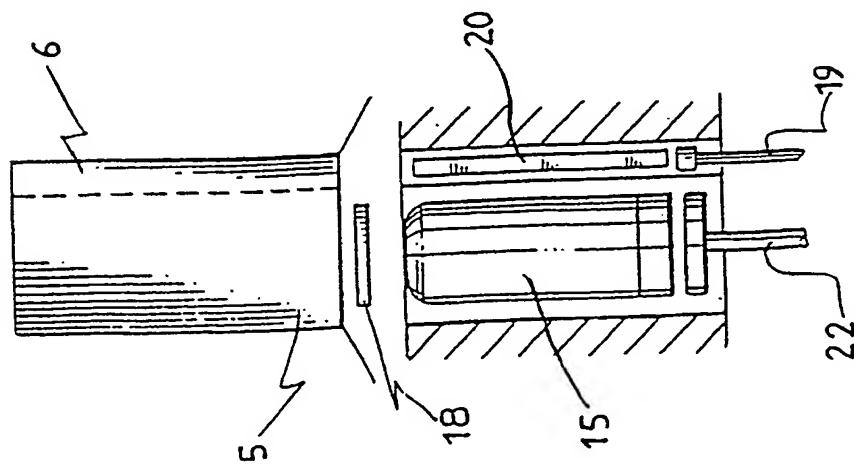


FIG. 5a



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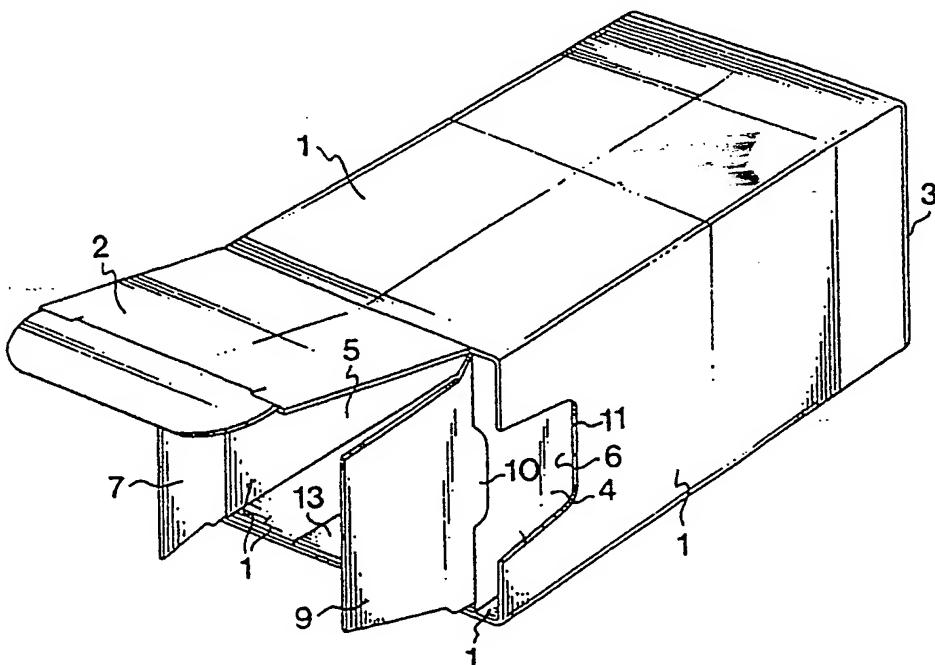
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(57) Abstract

Carton especially for pharmaceuticals, having at least three side walls (1), a top tab (2) and a bottom tab (3). It also has a partition wall (4) extending in parallel with one of the side walls (1). The partition wall (4) separates a main compartment (5) from an additional compartment (6). The additional compartment is open towards the exterior of the carton and is suitable for a package insert. The invention

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/SE 99/01797

A. CLASSIFICATION OF SUBJECT MATTER

IPC7: B65B 61/20, B65D 5/486 // A61J 1/00
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC7: B65B, B65D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

SE,DK,FI,NO classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

WPI, EPO

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5775574 A (SIMON WHITNELL), 7 July 1998 (07.07.98), figures 2,8,9 --	1-9
A	DE 2946779 A1 (DUMONT, WILHELM), 27 May 1981 (27.05.81), figures 1-3 --	1-9
A	DE 3208777 A1 (VOGEL WOLFGANG), 22 Sept 1983 (22.09.83), figures 1-15, abstract --	1-9
A	GB 2277077 A (P & I PRINTING (SALES) PTY LTD), 19 October 1994 (19.10.94), figures 1-7, abstract --	1-9

Further documents are listed in the continuation of Box C.

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Date of the actual completion of the international search

Date of mailing of the international search report
05-06-2000

5 June 2000

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INTERNATIONAL SEARCH REPORT

International application No. PCT/SE 99/01797
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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 9408857 A1 (F.H. FAULDING & CO. LIMITED), 28 April 1994 (28.04.94), figure 1, abstract --	1-9
Y	SE 503524 C2 (MÖLNLYCKE AB), 1 July 1996 (01.07.96), page 5, line 30 - page 6, line 6, figures 4-7 --	10-15
Y	EP 0812768 B1 (KLÖCKNER HÄNSEL GMBH), 17 December 1997 (17.12.97), figures 1-3 --	10-15
A	EP 0957028 A1 (MARCHESINI GROUP S.P.A.), 17 November 1999 (17.11.99), figure 1, abstract --	10-15
A	GB 1584162 A (ROBERT BOSCH GMBH), 11 February 1981 (11.02.81), figures 1-6 --	10-15
A	DE 3341573 A1 (MONTI, GIUSEPPE), 20 Sept 1984 (20.09.84), figures 3-9 -----	10-15

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/SE 99/01797

Patent document cited in search report		Publication date	Patent family member(s)		Publication date
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